FIG. 1

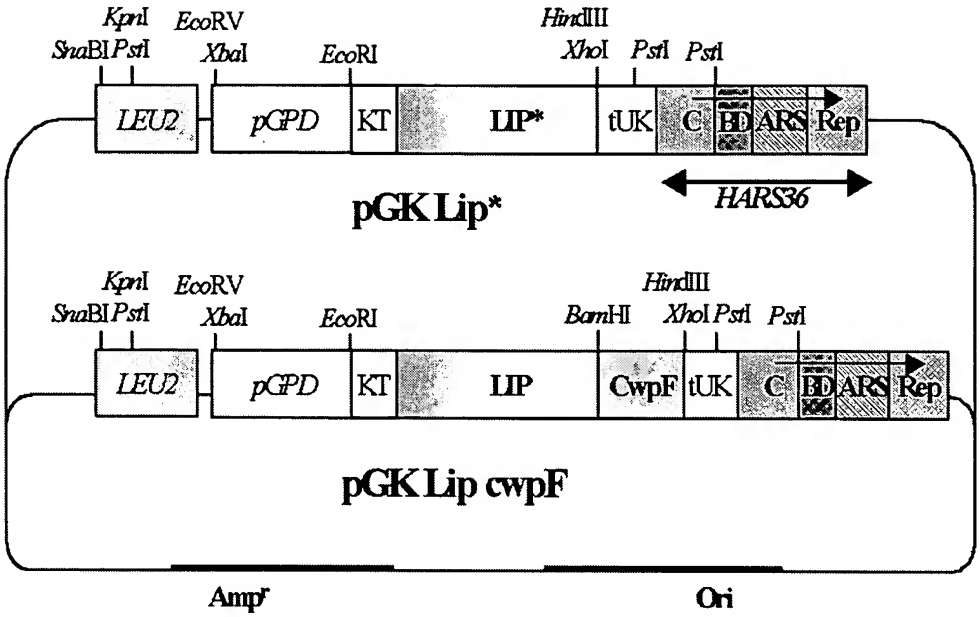

KpnI
SnaBI PstI
EcoRV
XbaI
EcoRI
HindIII
XhoI
PstI
PstI
LEU2
pGPD
KT
LIP*
tUK
C
BD
ARS
Rep
HARS36
pGK Lip*
KpnI
SnaBI PstI
EcoRV
XbaI
EcoRI
HindIII
BamHI
XhoI PstI
PstI
LEU2
pGPD
KT
LIP
CwpF
tUK
C
BD
ARS
Rep
pGK Lip cwpF
Amp
Ori

FIG. 2

```
                    *         20         *         40         *
LIP10.PRO :  MNIFYIPLFLLSFVQGTATPLVKRLPSGSDPAFSQPKSVLDAGLTCQGAS :  50
LIP14.PRO :  MNIFYIPLFLLSFVQGTATPLVKRLPSGSDPAFSQPKSVLDAGLTCQGAS :  50
WTLIP.PRO :  MNIFYIPLFLLSFVQGTATPLVKRLPSGSDPAFSQPKSVLDAGLTCQGAS :  50

                   60         *         80         *        100
LIP10.PRO :  PSSVSKPILLVPGTGTTGPQSFDSNWIPLSAQLGYTPCWISPPPFMLNDT :  100
LIP14.PRO :  PSSVSKPILLVPGTGTTGPQSFDSNWIPLSAQLGYTPCWISPPPFMLNDT :  100
WTLIP.PRO :  PSSVSKPILLVPGTGTTGPQSFDSNWIPLSAQLGYTPCWISPPPFMLNDT :  100

                    *        120         *        140         *
LIP10.PRO :  QVNTEYMVNAITTLYAGSGNNKLPVLTWSQGGLVAQWGLTFFPSIRSKVD :  150
LIP14.PRO :  QVNTEYMVNAITTLYAGSGNNKLPVLTWSQGGLVAQWGLTFFPSIRSKVD :  150
WTLIP.PRO :  QVNTEYMVNAITTLYAGSGNNKLPVLTWSQGGLVAQWGLTFFPSIRSKVD :  150

                   160         *        180         *        200
LIP10.PRO :  RLMAFAPDYKGTVLAGPLDALAVSAPSVWQQTTGSALTTALRNAGGLTQI :  200
LIP14.PRO :  RLMAFAPDYKGTVLAGPLDALAVSAPSVWQQTTGSALTTALRNAGGLTQI :  200
WTLIP.PRO :  RLMAFAPDYKGTVLAGPLDALAVSAPSVWQQTTGSALTTALRNAGGLTQI :  200

                    *        220         *        240         *
LIP10.PRO :  VPTTNLYSATDEIVQPQVSNSPLDSSYLFNGKNVQAQAVCGPIFVIDHAG :  250
LIP14.PRO :  VPTTNLYSATDEIVQPQVSNSPLDSSYLFNGKNVQAQAVCGPQFVIDHAG :  250
WTLIP.PRO :  VPTTNLYSATDEIVQPQVSNSPLDSSYLFNGKNVQAQAVCGPIFVIDHAG :  250

                   260         *        280         *        300
LIP10.PRO :  SLTSQFSYVVGRSALRSTTGQARSADYGITDCNPLPANDLTPEQKVAAAA :  300
LIP14.PRO :  SLTSQFSYVVGRSALRSTTGQARSADYGITDCNPLPANDLTPEQKVAAAA :  300
WTLIP.PRO :  SLTSQFSYVVGRSALRSTTGQARSADYGITDCNPLPANDLTPEQKVAAAA :  300

                    *        320         *        340
LIP10.PRO :  LPAPAAAAAIVAGPKQNCEPDLMPYARPFAVGKRTCSGIVTPGS :  343 SEQ ID NO: 9
LIP14.PRO :  LPAPAAAAAIVAGPKQNCEPDLMPYARPFAVGKRTCSGIVTPGS :  343 SEQ ID NO: 10
WTLIP.PRO :  LLAPAAAAAIVAGPKQNCEPDLMPYARPFAVGKRTCSGIVTPGS :  343 SEQ ID NO: 19
```

FIG. 3

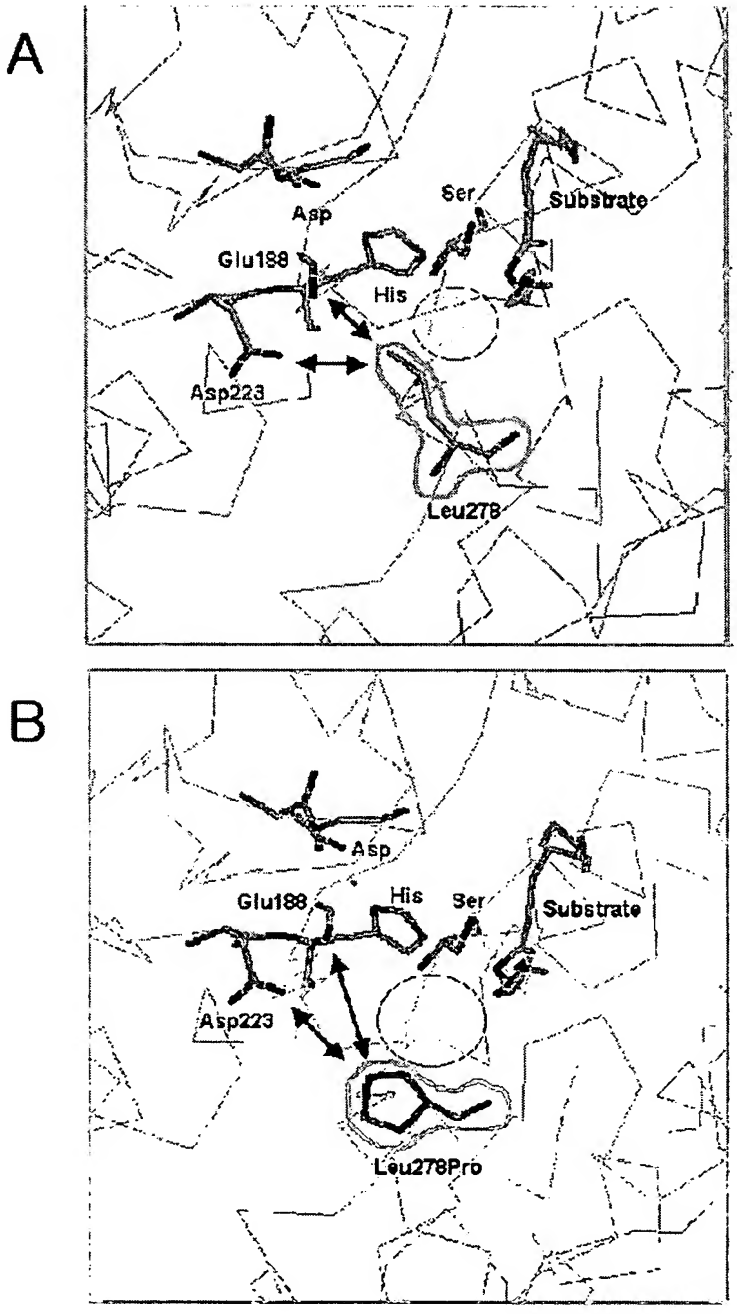

A
Asp
Ser
Substrate
Glu188
His
Asp223
Leu278
B
Asp
Glu188
His
Ser
Substrate
Asp223
Leu278Pro

FIG. 4

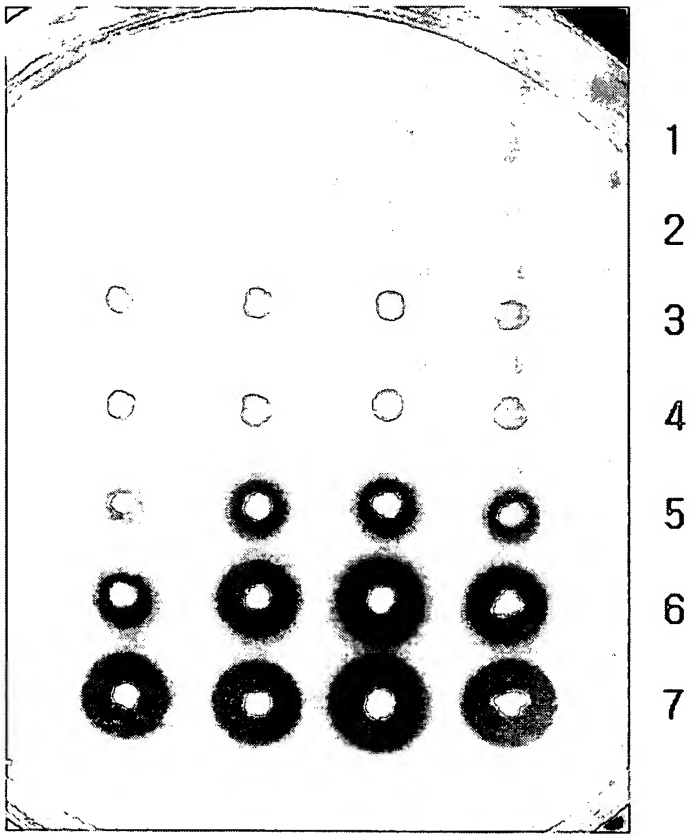


FIG. 5

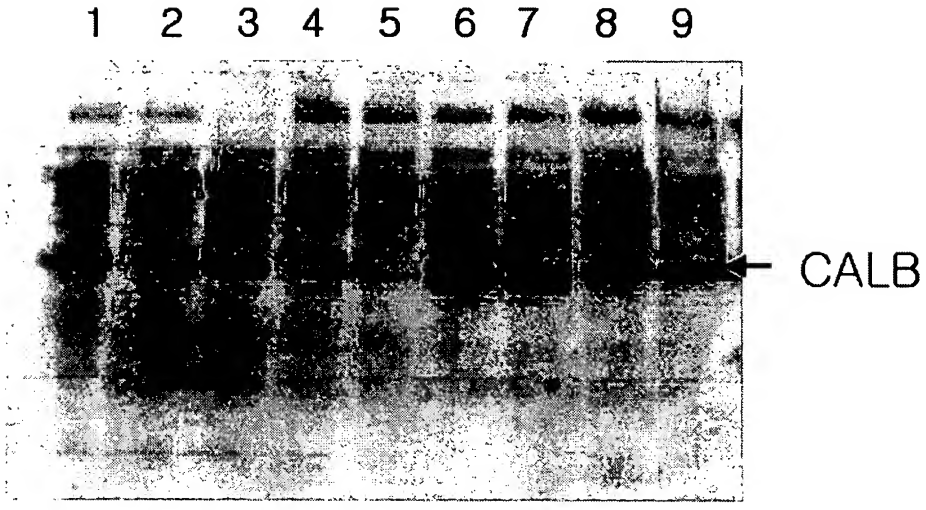


FIG. 6a

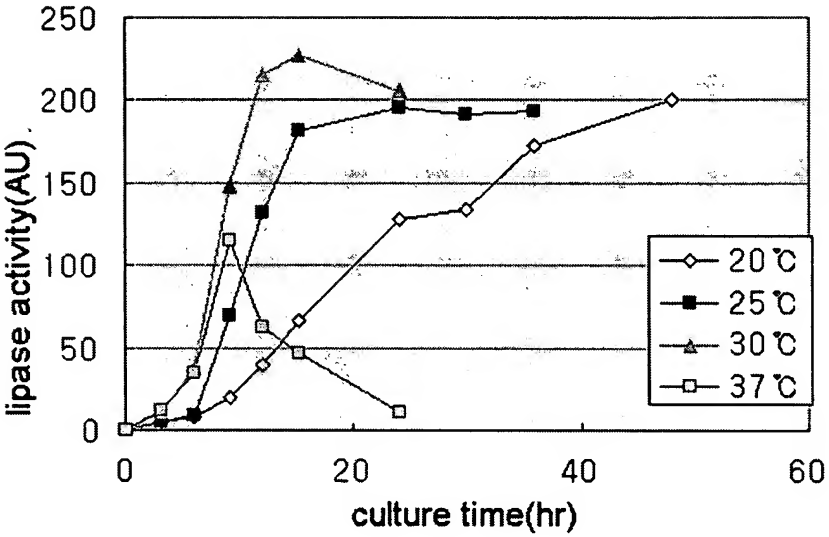

250
200
150
100
50
0
lipase activity(AU)
0
20
40
60
culture time(hr)
20℃
25℃
30℃
37℃

FIG. 6b

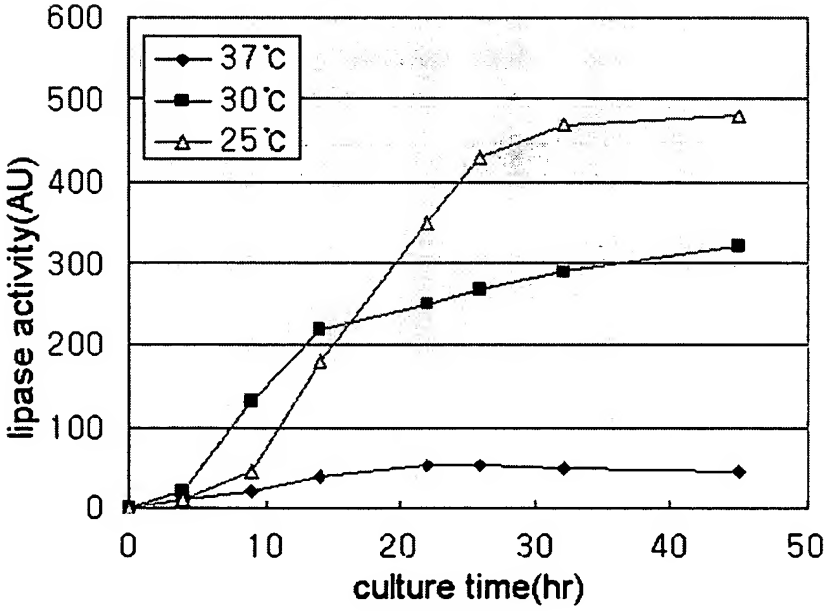

600
500
400
300
200
100
0
lipase activity(AU)
0
10
20
30
40
50
culture time(hr)
37℃
30℃
25℃

FIG. 7a

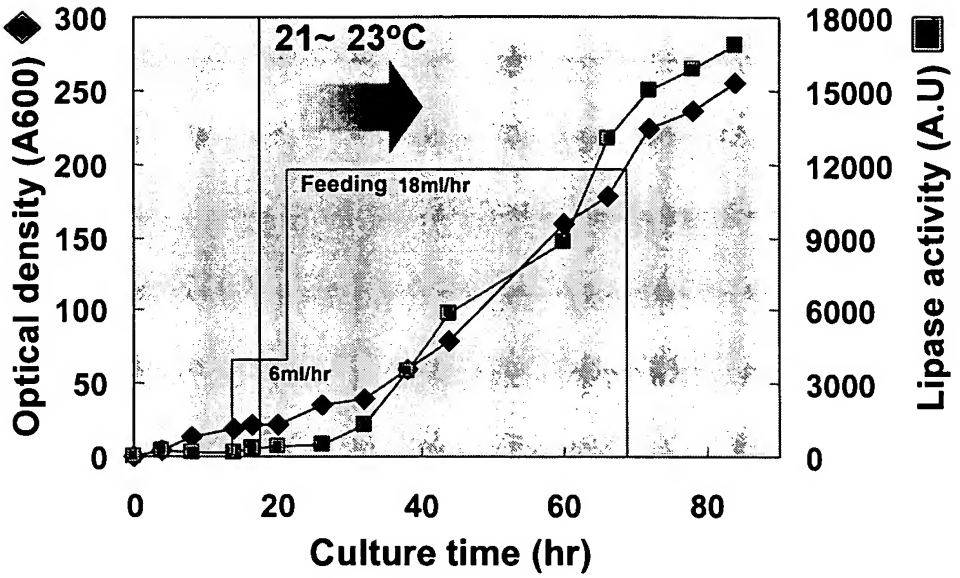
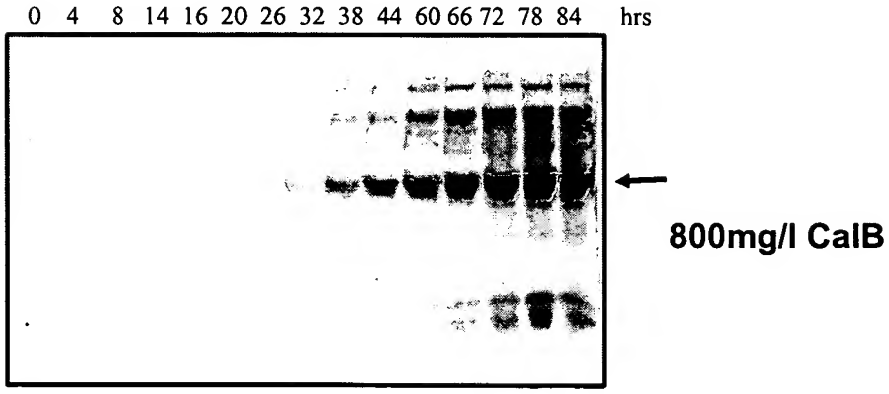

21~ 23°C
Feeding 18ml/hr
6ml/hr
Optical density (A600)
Lipase activity (A.U)
Culture time (hr)
0
50
100
150
200
250
300
3000
6000
9000
12000
15000
18000
0
20
40
60
80

FIG. 7b


0 4 8 14 16 20 26 32 38 44 60 66 72 78 84 hrs
800mg/l CalB